PROGRESS

OF

MEDICAL SCIENCE.

MEDICINE.

UNDER THE CHARGE OF
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Mechanical Treatment of Anasarca.—K. DEHIO (*St. Petersburg med. Wochenschrift,* December 23, 1900) discusses the methods that have been suggested for the mechanical treatment of anasarca and describes the apparatus which he has devised for this purpose. It consists of a rubber band widened at one area, at which point there is an opening about 8 cm. in diameter. In this opening is placed a rubber funnel, which is fastened to the band. The outlet of the funnel is connected with the tube, and after careful disinfection of the skin a number of incisions are made close to each other, the funnel is closed by means of the band, and the incised area is kept absolutely protected from air and from infection. He reports fifteen cases which he has treated with this apparatus, with apparently extremely successful results. He states that as much as ten or twelve litres may escape in this way in one day. It is important not to put the funnel on very tightly, as this interferes with the flow; it is merely essential that it shall be so applied that air cannot enter beneath it. It is always important that the patient should lie with the incised area on a low level. Dehio believes that proper mechanical treatment of anasarca will have very successful results if it is undertaken sufficiently early. One valuable point about the apparatus is that it allows of a ready collection of the fluid. He describes the fluid which he obtained in a series of cases of nephritis, and compares it with that obtained in cardiac failure with general venous stasis. The most striking fact was that while the albumin in the cardiac cases (estimated by the Essbach method) was always above two parts in a thousand and reached as high as five parts in a thousand, in the nephritic cases it never went above 1.5 parts in a thousand and in most cases was present in traces only, but estimation of the nitrogen showed that this was about equal in the two classes of cases; it was a little higher, as a rule, in the cardiac cases, but there was not a great difference. The conclusion which Dehio reaches after examination of these figures is that in nephritis the fluid of the anasarca contains, beside albumin, some nitrogenous substances which are absent in the mechanical œdema of cardiac disease. These are probably products of protein metabolism which are not properly excreted through the urine. He also discussed the character of the fluids seen in ascites, in hydrothorax, and in anasarca. The observations of other workers have shown that in general the transudates in cases of nephritis are of lower specific gravity than in cases of cardiac failure. In nephritis, for instance, the specific gravity of the ascitic fluid averages about 1006, that of hydrothorax 1007, and that of anasarca (Dehio) 1007. With general cardiac failure the ascitic fluid is about 1012, the fluid of hydrothorax is about the same, while that of anasarca (Dehio) is almost the same as the anasarca of chronic nephritis—*i. e.*, 1008. The fluids of hydrothorax and ascites have been found to contain much less albumin in cases of nephritis than in general circulatory failure—conditions similar to those found by Dehio in anasarca. For instance, the ascites of nephritis was found to contain 0.2 per cent. and that of general circulatory stasis 1.7 per cent. It is notable that the fluid of the subcutaneous tissues seems, according to Dehio's investigations, to be much poorer in albumin than that of transudates into the peritoneal and pleural cavities, as his average for anasarca was in cardiac cases 0.36 per cent. albumin, while in ascites and hydrothorax there have been found 1.6 per cent. and 1.3 per cent. The results which Dehio obtained seemed to confirm the statement previously made by Hoffmann, that if the fluid of anasarca contains less than 0.1 per cent. of albumin, severe disease of the kidneys may be diagnosed. Dehio noticed all grades of variation between the very low percentage in pure nephritic cases and the high percentage in cardiac cases—a very natural observation, as the renal condition and the cardiac condition have varying degrees of importance in such cases, and it is only rarely that anasarca is purely nephritic or purely cardiac. He compares the results of the study of the œdema fluid and normal blood plasma, and directs attention to the fact that while salts were present in both cases in about the same amount the albumin and the dry residue in general were far greater in blood plasma than in the fluid of œdema. This indicates, to his mind, that in œdema the capillary walls permit the salts to pass very easily, while they maintain considerable resistance against the passage of albumin and other organic substances.

Bacteriology of Rheumatism.—F. Meyer (*Deutsche med. Wochenschrift*, February 7, 1901) states that in investigating cases of acute articular rheumatism bacteriologically, after unsatisfactory results from the direct examination of the joint exudate, he made cultures from the tonsils and discovered practically regularly the presence of a diplococcus which grew in chains and which in its bacteriological characteristics had a close resemblance to the organism previously described by Wassermann, but was not identical with it. This organism was not found on the tonsils of persons who had not acute rheumatism. When injected into animals it produced a seropurulent exudation in the joints, which was usually sterile. In about one-fifth of the animals so injected there was a verrucose or ulcerative endocarditis. He does not think that one can yet state positively whether the streptococcus is actually the cause of rheumatism, or if it is the cause of rheumatism whether it is the only cause. The number of cases as yet investigated is too small.

MENZER (*Deutsche med. Wochenschrift*, February 14, 1901), in discussing Meyer's results, directs attention to the fact that streptococci have been found repeatedly on the tonsils and in the joint exudate in cases of rheumatism, and that Meyer's results, while important, are not wholly new, though the fact that the streptococci found by him and by Wassermann produced changes in the joints and endocardium is important. He describes his own results in four cases. In two of these the exudate from the joints showed the presence of streptococci, of diplococcus form, and in three cases, one of which was one of those previously mentioned, he obtained diplococci in streptococcic form from the substance of the tonsils. Portions of the tonsils was excised and bacteriological preparations were made from the cut surface. He thinks that it is still a question whether one will constantly be able in cases of acute rheumatism to obtain bacteria which produce joint changes in animals. It is also doubtful whether only the streptococci that have been found will show these characteristics. It is further necessary to consider the possibility that such changes may be produced by the microorganisms which are found on the tonsils in normal persons. He considers it possible that some one form of organism among those already described will be found to be the specific cause of acute rheumatism, though this is certainly doubtful, considering the close relation which rheumatism bears to atypical rheumatoid affections and to pyæmia. Still, from a clinical standpoint, rheumatism, to his mind, presents the appearance of a morbus sui generis.

Bacteriological Examination in a Case Resembling Typhoid Fever — SCHOTTMÜLLER (*Deutsche med. Wochenschrift*, 1900, No. 32) has examined the blood in fifty cases of typhoid fever, and found the specific bacilli in forty. Among the cases was one clinically resembling typhoid, in a patient who, convalescent from erysipeloid of the finger, was observed from the beginning. After three days of subnormal temperature the disease began with malaise, headache, and coryza; slight redness of the conjunctiva, the nasal mucous membranes, and pharynx. The temperature was 104°, pulse 80, full and regular. On the fourth day the spleen could be felt. On the sixth day the conjunctiva was normal, the tongue dry and red; there was bronchitis. On the ninth day roseolæ appeared, and became more numerous in the following days. Continued fever, at about 104°, lasted ten days. Lysis then began; convalescence was interrupted by slight elevations of temperature. There were no characteristic stools. The blood on the sixth day gave colonies of bacilli, resembling those of typhoid fever in many respects, especially morphologically and tinctorially, but differing in others. It did not coagulate milk; it produced acid; it did not form indol, but it caused fermentation. The serum reaction of the patient was negative with fresh typhoid cultures in dilutions of 1 : 20 to 1 : 100. The patient's own serum caused agglutination of his own cultures at 1 : 50 and 1 : 20, but not at 1 : 100, but after the fever even a dilution of 1 : 100 was effective on the new bacilli, not on typhoid cultures. Serum from other cases of typhoid fever caused no agglutination, except in one case, at 1 : 20. The case brings additional proof that we can have a disease clinically resembling typhoid fever without the specific bacilli. In the present instance we are without evidence as to the anatomical changes. The condition is obviously rare, but aside from its general interest it may have some bearing on the exceptional cases of typhoid that do not give the Widal reaction.

Septic Endocarditis.—E. MÜNZER (*Zeitschrift für Heilkunde*, Band xxi., p. 251) particularly directs the attention of the general practitioner to the not infrequent occurrence of prolonged febrile conditions of obscure origin, and dwells on the importance of the group of cases, belonging under this heading, which Litten terms chronic recurring septic endocarditis. Münzer reports a series of cases. In three of these there was a very definite relation to rheumatism or association with this disease, at any rate; in two cases the symptoms of endocarditis occurred after articular rheumatism, in the third after muscular rheumatism. The general relation between rheumatism and endocarditis is well known, and it is now recognized that rheumatism is of bacterial origin; also, it is known that the micro-organisms found in rheumatism are generally those that are found in septic endocarditis, hence a possible connection between the two diseases is readily seen. It is very difficult to draw the line between mere benign rheumatic endocarditis and a septic endocarditis associated with rheumatism, particularly when the person with rheumatic endocarditis shows a febrile recurrence, with signs of renewed involvement of the endocardium. There are undoubtedly cases which may be considered connecting links between pure septic endocarditis and what we commonly accept as rheumatic endocarditis. Münzer lays emphasis upon the fact that in the beginning of these cases cardiac symptoms are absent, and the diagnosis must be established upon a rise of temperature in the evening, which is later followed by an erratic course of fever, with chills, swelling of the spleen, sometimes definite symptoms of infarct, more or less pain in the joints, and hemorrhages into the skin and into the choroid. The most important diagnostic difficulty is always in distinguishing the cases from typhoid fever and malaria. The prognosis is bad, but always absolutely so.

Metabolism in Obesity.—A. JAQUET and N. SVENSON (*Zeitschrift für klin. Med.*, Band xli., Hefte 5 and 6) contribute a study of the metabolism in three cases of obesity. There has been much discussion as to whether there really exists any condition in which there is suboxidation of fats and obesity resulting from this. The existence of such a condition, though suspected, has not been proved. If the results reported in this paper are confirmed it apparently does exist. The authors found in consonance with other observers that the respiratory interchange in three obese subjects was normal during a period of temporary abstinence from food, but they lay stress upon the fact that when observed after taking food the respiratory interchange showed a much briefer and less pronounced increase than is customary in normal persons. This, they believe, is sufficent to explain the fat deposit. The reaction of the respiratory interchange to muscular exercise seemed to vary according to the condition of the other organs. In one case it was normal or about normal; in two others a relatively slight increase in muscular exercise caused a marked increase in the consumption of oxygen. The use of thyroid was tried in these cases and a marked decrease in weight was produced. In the one series of studies the authors believe that they demonstrated an actual diuretic effect of thyroid extract, and they believe that in this case the loss of water was sufficient to explain the loss in weight. In other instances, however, there was an increase of metabolism and the oxidation processes seemed to be definitely increased after taking food, though there was not the same increase during abstinence.

Determination of the Species of Blood.—UHLENHUTH (*Deutsche med. Wochenschrift*, February 7, 1901) contributes some very interesting results which he has obtained in the effort to provide a method for the differentiation of various forms of blood. He injected rabbits with 10 c.c. of defibrinated cow's blood, making five such injections at intervals of about a week. He then made a perfectly clear solution of cow's blood in about one hundred parts of water, filtering off any deposits which formed. He introduced about 2 c.c. of this solution into small test-tubes and added an equal amount of 1.6 per cent. salt solution. A cloudiness resulted when the blood-serum of the rabbit was added to the solution. He considers it extremely important to use physiological salt solution in diluting and not mere water, as normal rabbit serum will become cloudy if introduced into a watery solution. He states that the results seem to be entirely specific, as solutions of a large series of blood from other animals caused no reaction. When, however, the blood of other animals or of human beings was originally injected into the rabbits whose serum was used in the test, the same reaction occurred with the special form of blood used, but with no other. He believes that in this way one may definitely tell human blood from other blood. The reaction was obtained from blood of various species that had been dried for weeks, dissolving it first in physiological salt solution.

Bacteriological Diagnosis of Typhoid Fever.—E. SCHOLZ and P. KRAUSE (*Zeitschrift für klin. Med.*, Band xli., Hefte 5 and 6) contribute a study of some of the bacteriological methods now in use in the diagnosis of typhoid fever. Scholz discusses the Widal reaction and reaches the conclusion that it is of little value in early diagnosis. He ranges it among other symptoms of typhoid fever, all of which may at times be absent or appear only late in the disease. He believes that the greatest weight should be laid upon exact clinical observation of the whole course of the disease in distinguishing typhoid fever from similar conditions. The latter part of his observation is undoubtedly proper, but his observations concerning the Widal reaction were confined to the investigation of only 55 cases, 47 of which were positive and 8 negative. Among the positive cases there were 3 in which the reaction appeared only after five weeks. The series of 8 negative cases contained 2 in which the last test of the reaction was made on the ninth day; in 2 others the reaction was undertaken on the eighteenth and twenty-fifth days, but in the remaining 4 the test proved negative when undertaken between the sixty-second and the one hundred and sixth days of the disease. These observations, while of interest, are too few in number to be compared with the large numbers of cases already reported, which show that the reaction is much more important than most other symptoms of the disease. Krause has studied the value of investigation of typhoid spots for bacilli. In 14 of 16 cases he obtained characteristic bacilli, and he considers this a more important method of examination than the Widal test, as five cases which showed bacilli in the spots showed no agglutination. He directs attention, however, to the fact that the bacilli may disappear from the spots within three to five days after the appearance of the spots, and that several spots should always be examined, as bacilli may be absent from some of them. He recommends making several moderately deep incisions into the spots and scratching the surface thoroughly when inoculating media from the spots. He admits that this method is of limited value as a diagnostic measure, because spots are absent in a considerable number of cases, other eruptions are readily confused with the typhoid eruption, the spots oftentimes do not appear early enough to be of great aid in diagnosis, and bacilli cannot always be obtained from them. [This method of examination, because of the technical difficulties connected with it, cannot ever prove as useful as the Widal reaction in the great mass of cases, as it is impossible to carry it out without fairly extensive bacteriological apparatus and the services of a bacteriologist of some skill, while the Widal reaction requires little apparatus, comparatively little special experience, and is less disturbing to the patient.] Krause has also studied Piorkowski's method of inoculating a urine-gelatin medium with the stools of suspected cases. He investigated 19 cases, making in all 123 tests. He found that in three-fourths of these instances the test was positive, while in four typhoid bacilli were not obtained. He thinks that this culture medium is a valuable addition to bacteriological methods, but that for diagnostic purposes the appearances of plate cultures alone are insufficient, and the bacilli must always be recognized by the usual chemical and biological measures. He found that this method could be more easily carried out, without waiting for urine to become alkaline spontaneously, if the urine were inoculated with the micrococcus ureæ and kept in a thermostat for from twenty-four to forty-eight hours. The dilute gelatin used in this medium becomes fluid very easily, however, and the medium cannot be satisfactorily used in summer time.

Gastric Carcinoma.—E. JÜRGENSEN (*Deutsch. Archiv für klin. Med.*, Band lviii., Hefte 5 and 6) describes a case of carcinoma of the stomach in which it was notable that the HCl secretion was present until shortly before death and that there was marked variation in the daily amount of urine. At times practically no urine was secreted, and at such times there was marked tendency to somnolence, the reflexes were decreased, and the pupils were much contracted. The administration of large quantities of water per rectum and subcutaneously caused the disappearance of these symptoms coincidently with increase in the excretion of urine. The most rational explanation of the symptoms seemed to be poverty of fluids in the tissues. In another case of carcinoma there was marked fever of an irregularly remitting character. With the attacks of fever evidences of breakdown of the tumor were shown in vomiting of blood and increased pain and tenderness. The fever was attributed to the absorption of the products of tumor destruction. In the periods in which the patient was free from fever the urine showed marked diazo-reaction and there was decided rapidity of the pulse. These symptoms were also attributed to absorption of toxic materials formed in the tumor destruction. RÜTINMEYER (*Korrespondenzblatt für Schweizer Aerzte*, 1900, Nos. 21 and 22) discusses the clinical conditions in gastric carcinoma. Of 86 cases he found that 14, or 16 per cent., showed free HCl upon the first examination. This is somewhat higher than the percentage ordinarily given. Of these 14 cases 6 were certainly developed upon the basis of an old ulcer. In the other cases this question was in doubt. The free HCl was often found still present when the tumor had become large and even just before death. Distinct lactic acid reaction was obtained in 87 per cent. and Oppler-Boas bacilli were found in 80 per cent. In three cases the carcinoma was observed very early in life, during the fourteenth, nineteenth, and twenty-third years respectively. ROSTOSKI, in an abstract of this article (*Centralblatt für innere Med.*, January 12, 1901, p. 52), stated that he had recently seen a case of carcinoma in a patient aged sixteen years. The case came to autopsy and the diagnosis was confirmed.

Mitral Stenosis without Murmur.—STRAUSS (*Centralblatt für innere Med.*, January 12, 1900) demonstrated to the Berlin Medical Society a case of mitral stenosis in which there had been no murmurs during life, but the diagnosis had been established. The patient was a glassblower, aged twenty-one years, who had had dyspnœa for years, with occasional hæmoptysis; he had no rheumatic history. His pulse was small and irregular, there was marked enlargement of the cardiac dulness, pulsation was visible in the third left intercostal space, and there was marked epigastric pulsation, but the cardiac sounds were pure. The reasons for making the diagnosis were irregularity of the pulse, with accentuation of the second pulmonary sound, marked epigastric pulsation, and circumscribed tenderness about the cardiac apex. The post-mortem showed an extremely high grade of mitral stenosis, with narrowing of the aortic orifice and some aneurismal widening of the pulmonary conus arteriosus.

A. FRAENKEL, in discussion, stated that he believed that the reason that aortic stenotic murmurs are likely to disappear shortly before death is that the energy of the heart action grows weaker. He spoke of a case of aortic stenosis in which there was a loud murmur two years ago. The patient recently died, the murmur being heard shortly before his death only as a soft, blowing sound at the apex. Autopsy showed a high grade of aortic stenosis.

Volvulus of the Stomach.—WIESINGER (*Deutsche med. Wochenschrift*, February 7, 1901) describes a highly interesting case of volvulus of the stomach, with complete occlusion of the cardia and pylorus and associated with acute fat necrosis, in which entire cure followed operation. The patient was a man, aged forty-one years, who, after a dietetic indiscretion, was taken suddenly ill in the midst of entire health. He had vomiting, constipation, pain, and distention of the abdomen. The vomiting in a short time became unproductive of anything but mucus. Any attempt to swallow was followed by immediate regurgitation. The patient was brought to the hospital on the fourth day of his sickness; at that time there was a large mass in the upper portion of the abdomen. Operation was undertaken and the anterior wall of the stomach was found lying over the mass. The latter, from its cystic feeling, was thought to be possibly a pancreatic cyst. It was punctured and a very large quantity of fluid was drawn off (about 4 litres). It then became evident that the whole mass was the stomach distended with fluid and that the pancreas was entirely healthy excepting, perhaps, for some enlargement. The stomach was found twisted about 180° on its axis and fixed in this position through adhesions, the pylorus and cardia being completely occluded. There was beginning peritonitis. The stomach was replaced in proper situation and retained its position without any artificial aid. The man became entirely well and remained so. The case is especially notable for the entire cure of fat necrosis by operation. The fat necrosis was probably due to pressure of the distended stomach upon the pancreas itself or upon its main duct. The cause of the volvulus seemed to be displacement of the colon above the stomach, so that the partial fixation which this organ normally gives the stomach was absent. When a partial volvulus had come to pass this was undoubtedly largely increased by the distention of the stomach with the fluid secreted into it in such large amounts.

Hæmatemesis in Intestinal Stenosis.—L. ATIXIER and C. VIANNAY (*Gazette hebdom. de Méd. et de Chir.*, 1900, No. 77) direct attention to the rarity with which hæmatemesis has been mentioned as a symptom of stenosis of the intestine; it is not commonly discussed among the causes of gastric hemorrhage. It is, nevertheless, not surprising that it does occasionally occur. In the case reported by the authors the patient was admitted with the signs of severe intestinal stenosis, which laparotomy showed to be due to adhesions in the ileocæcal region. These were overcome as far as possible and the patient improved temporarily, but after a few hours began to vomit again; the vomitus was black, had no fecal odor, and gave the characteristic reactions of blood. The patient died the next day after having vomited certainly as much as 2 litres of this black material within twenty-four hours. The stenosis was found to be about 50 cm. from the ileocæcal valve, the intestine being fixed by adhesions and almost completely stenosed. Masses resembling the vomitus were found in the upper portion of the small intestine, while normal feces were found in the lower part. In the upper portion of the small intestine there was severe congestion and there was a hemorrhagic suffusion at the point of stricture. The occurrence of the hemorrhage was explained chiefly by the blood stasis produced by the stricture, which had caused an intense congestion of the intestinal mucous membrane; the authors also consider that the irritation of the peritoneum had caused severe vasomotor disturbance, and that the toxic and inflammatory changes present had caused alteration of the vessel walls and of the blood. There was no sign of ulceration in this case, and the authors direct attention to the fact that hemorrhage has been seen in a number of similar cases in which no change was found in the intestine which directly localized the source of the hemorrhage. Hemorrhage in such cases makes the prognosis extremely bad. It indicates severe lesions as a result of the occlusion.